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August 02, 2004

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APPLICATION NUMBER: 60/467,995

FILING DATE: May 05, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/13860

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS



P. R. GRANT
Certifying Officer

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1c648 U.S. PTO
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Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

Express Mail Label No. EV085693795US

INVENTOR(S)					
Given Name (first and middle [if any])	Family Name or Surname		Residence (City and either State or Foreign Country)		
Chad Andrew Eric Stephen	Lefevre Carlsgaard		Indianapolis, Indiana Zionsville, Indiana		
<input checked="" type="checkbox"/> Additional inventors are being named on the 1 separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
1394 INPUT AUTO-PAUSE AND AUTO-PLAY/SPECIAL FEATURES AUTO-PLAY					
CORRESPONDENCE ADDRESS					
Direct all correspondence to:					
<input type="checkbox"/> Customer Number <input type="text"/> → <div>Place Customer Number Bar Code Label here</div>					
OR					
<input checked="" type="checkbox"/> Firm or Individual Name					
JOSEPH S. TRIPOLI, THOMSON MULTIMEDIA LICENSING INC.					
Address					
PATENT OPERATIONS.					
Address					
TWO INDEPENDENCE WAY, SUITE #2					
City		PRINCETON	State	NJ	ZIP
Country		USA	Telephone	609-734-6834	Fax
					08540
					609-734-6888
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification Number of Pages <input type="text"/> 4 <input type="checkbox"/> CD(s), Number <input type="text"/>					
<input checked="" type="checkbox"/> Drawing(s) Number of Sheets <input type="text"/> 3 <input type="checkbox"/> Other (specify) <input type="text"/>					
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.					
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees					
<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: <input type="text"/> 07-0832					
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
FILING FEE AMOUNT (\$)					
<input type="text"/> 160					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,
SIGNATURE 

Date 5/5/03

TYPED or PRINTED NAME Reitseng Lin

REGISTRATION NO. 42,804
(if appropriate)

TELEPHONE 609 734-6813

Docket Number: PU030136

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

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1c971 U.S. PTO
60/467995

PROVISIONAL APPLICATION COVER SHEET
Additional Page

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PTO/SB/16 (02-01)
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Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Docket Number		PU030136	Type a plus sign (+) inside this box →	+
INVENTOR(S)/APPLICANT(S)				
Given Name (first and middle (if any))	Family or Surname	Residence (City and either State or Foreign Country)		
Mark Alan	Logan	Beech Grove, Indiana		

Number 2 of 2

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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 160

Complete if Known

Application Number
Filing Date
First Named Inventor Chad Andrew Lefevre
Examiner Name
Group / Art Unit
Attorney Docket No. PU030136

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number 07-0832

Deposit Account Name Thomson Licensing Inc.

The Commissioner is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments
☒ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	160
SUBTOTAL (1)					(\$ 160)

2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims -20 **	0	X	0
Multiple Dependent Claims -3 **	0	X	0
		X	0

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	84	2201	42	Independent claims in excess of 3	
1203	280	2203	140	Multiple dependent claim, if not paid	
1204	84	2204	42	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$ 0)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	2053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	830	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1808	180	1808	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	750	2809	375	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	800	1802	800	Request for expedited examination of a design application	
Other fee (specify)					
*Reduced by Basic Filing Fee Paid				SUBTOTAL (3)	(\$ 0)

SUBMITTED BY

Name (Print/Type)	Registration No. Attorney/Agent)	Telephone	Date
Reitseng Lin	42,804	609-734-6813	May 5, 2003
Signature			

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Brief summary of the invention

When adding the ability to watch and record a program at the same time over 1394 (PVR-type functionality), there came up an issue of retaining the exact place on the device where we left off (when switching to a different input, etc). Our solution to this was to automatically pause the device when leaving the input (and the device was playing) and to automatically play the device when returning (and the device was paused). We also decided to use similar functionality when using the Special Features Initial Channel mode with a 1394 device. When the Special Features Initial Channel is set up as 1394, we wait until the first device becomes available on the bus, and then we automatically connect to it and automatically play it.

B. Keywords: list keywords or combinations of keywords to guide patent and literature searches. Underline the most important keywords.

1394, Link, FireWire, AVHDD, PVR, auto-pause, auto-play, autopause, autoplay

C. Brief discussion of the problem solved by the invention

Our television has the ability to make two simultaneous connections to 1394 devices. One connection is to sink (record) data, and one connection is to source (play) data. The sink connection is only made when we initiate a recording, and is only broken when the recording is stopped. The source connection is made and broken each time we connect and disconnect to a device. This means that the disconnection will occur whenever we switch to a new 1394, as well as when we switch to a different input on the TV.

When recording a program to a 1394 AVHDD, the user also has the ability to play, pause, and time skip the program that is being recorded, which is a PVR-type functionality. When we break the 1394 source connection to the device (which we always do when leaving the device for another input) and later re-establish the source connection to the device, we will attempt to restart playing the track from the beginning, which is somewhat undesirable in a PVR-type device. On a PVR-type

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device, we need to either continue playing from the point at which the user left the device or from the point at which the device is currently (assuming that the device continued in the last state it was in). The latter situation requires an assumption to be made which has been proven to be false. Some devices currently on the market will reset their state if playing when disconnected. Other devices will continue to play when disconnected. In order to maintain the state of the device, we issue a pause command to the device (via the 1394 AV/C protocol) before issuing a disconnect to the source. When we return to the source device, if the device is in a paused state, we issue a play command to the device, in order to return the source device to the correct state.

We also had a problem with having a device playing on the display when power is removed from the TV. When power is reapplied, our natural reaction is to switch the user back to the antenna since the 1394 system takes a bit to finish its initialization. In some cases, however, we want the TV to automatically come up on the 1394 input and to also start playing automatically. This can be set up through the Special Features portion of our UI.

D. Discussion of how you or others have implemented similar things in the past, including the manner in which others have attempted to solve the problem. Point out disadvantages and weaknesses in previous practice. Include literature references where available.

Another option considered to fix the issue of keeping 1394 sources in a valid state was keeping a list of devices and maintaining what state they were in when last disconnected. However, it is more complex for maintaining device states for multiple devices.

Another option is not to disconnect the 1394 source device when we switched away. However, maintaining the connection leads the device to believe that it has an avenue to talk with our TV, potentially trying to send graphics via EIA-775 or trying to communicate via the 1394 AV/C protocol. This approach requires the capability of allowing multiple devices on the bus. If a TV can only maintain one input connection at a time, we would lose the state of any devices except the last device viewed, and if the user cycled through the list, we would only maintain the state of the very last device, even if the first device was the device that the user was interested in.

Other options regarding the Special Features Initial Channel were to make the system always come back up and play on 1394 if 1394 was the last input viewed before AC cycle. However, since the initialization of 1394 is a lengthy process, and the user would be required to wait on a blank screen until the device is up and ready to play. We decided that the Special Features Initial Channel was a good option, since it would have to be specifically set up to do this.

E. Description of the invention, including one or more practical embodiments of the invention in sufficient detail to allow one with ordinary skill in the art to practice the invention. Include

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schematic(s), flow chart(s), and/or figures to clarify operation of the invention. Point out important features and items you believe to be new. State advantages of the invention and sacrifices, if any, made to achieve these advantages. Describe any experiments conducted and the results of those experiments.

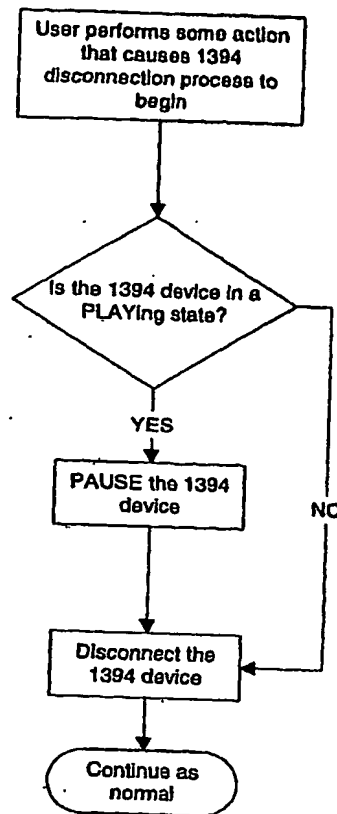
Our television has the ability to make two simultaneous connections to 1394 devices. One connection is to sink (record) data, and one connection is to source (play) data. The sink connection is only made when we initiate a recording, and is only broken when the recording is stopped. The source connection is made and broken each time we connect and disconnect to a device. This means that the disconnection will occur whenever we switch to a new 1394, as well as when we switch to a different input on the TV.

The first item addressed in this disclosure is an issue with maintaining device state without maintaining a connection to the device. When recording a program to a 1394 AVHDD, the user also has the ability to play, pause, and time skip the program that is being recorded, which is a PVR-type functionality. When we break the 1394 source connection to the device (which we always do when leaving the device for another input) and later re-establish the connection to the source device, we will attempt to restart playing the track from the beginning, which is somewhat undesirable in a PVR-type device. On a PVR-type device, we need to either continue playing from the point at which the user left the source device or from the point at which the source device is currently (assuming that the device continued in the last state it was in). The latter situation requires an assumption to be made which has been proven to be false. Some devices currently on the market will reset their state if playing when disconnected. Other devices will continue to play when disconnected. In order to maintain the state of the device, we issue a pause command to the source device (via the 1394 AV/C protocol) before issuing a disconnect. When we return to the source device, if the device is in a paused state, we issue a play command to the source device, in order to return the device to the correct state.

The second item addressed in this disclosure is an issue with powering off the TV on the 1394 input. When power is reapplied, our natural reaction is to switch the user back to the antenna, since the 1394 system takes a bit to finish its initialization. In some cases, however, we want the TV to automatically come up on the 1394 input and to also start playing automatically. This can be set up through the Special Features portion of our UI. This is primarily designed to be a "showroom floor"-type of feature, but could prove useful to other users of the product. Instead of switching back to the antenna, we wait for the 1394 software to finish its initialization, and we receive notification from the software when a device is found on the bus. When we receive this notification, we automatically issue a PLAY command if this option is set up.

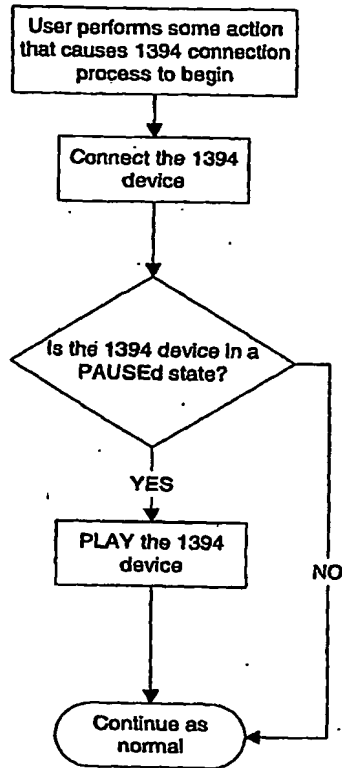
P0030136

Auto-pause 1394 device



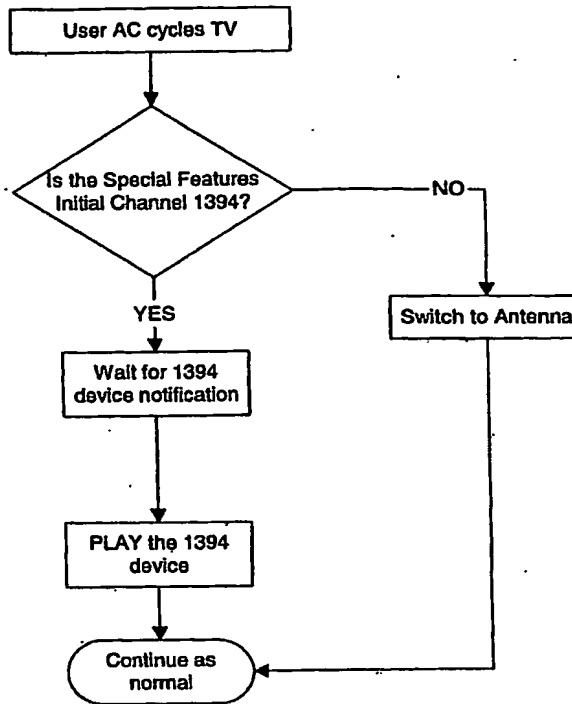
P0030136

Auto-play 1394 device



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Auto-play 1394 device on AC cycle



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